

REMARKS

Applicants' attorney thanks the Examiner for her comments. Independent Claims 1, 28, 38 and 39 have been amended so that each claim now recites that the foam:

- a) includes 10% to about 50% by weight thermoplastic elastomer,
- b) has an open cell content of greater than 55%, and
- c) has a fluid intake flux of about 1 ml/sec/in² or greater upon a first insult, about 1 ml/sec/in² or greater upon a second insult, and about 1 ml/sec/in² or greater upon a third insult.

The present invention is directed to a soft, resilient, open-celled absorbent foam useful as an absorbent (i.e., fluid retention) layer in absorbent articles, such as personal care absorbent articles. The elastomer contributes to the softness and resiliency of the foam and contributes to the opening of cells (p. 16, lines 7-19). The elastomer may also function as a plasticizer (p. 17, line 25 – p. 18, line 2). The high open cell content contributes to the absorbent properties and rapid fluid intake of the foam. While the specification refers generally to an open cell content of 50% or greater, the Examples (pp. 28 and 29, Tables 2 and 3) demonstrate an open cell content greater than 55%. The high fluid intake flux is one of several properties reflecting the usefulness of the foam for rapid absorption of aqueous liquids, supplied in multiple insults (p. 12, lines 1-16; p. 34, Table 8).

a) Claim Rejection Based On Double Patenting

The Examiner rejected Claims 1-39 based on obviousness-type double patenting over Claims 1-39 of copending U.S. Patent Application 11/218,825. A provisional Terminal Disclaimer (with fee) is submitted herewith to overcome this rejection. This rejection should be withdrawn.

b) Claim Rejection Based On Miller In View Of Handbook Or Federico

The rejection of Claims 1-39 under 35 U.S.C. §103(a) as obvious over U.S. Patent 6,268,046 ("Miller") in view of Landrode's Handbook Of Plastic Foams, p. 308 ("Handbook") or U.S. Patent 6,093,751 ("Federico") is respectfully traversed.

Miller discloses a closed cell foam which does not contain more than 55% open cells as required by Applicants' claims. As stated at Col. 9, lines 27-34 of Miller:

The resultant foam bodies generally contain a major amount of closed cells and a minor amount of open cells. The relative amount of closed cells can be determined, for example, according to ASTM D2856-A. In one embodiment, more than about 70% of the cells of the resultant foam bodies are closed cells. In another embodiment, more than about 80% of the cells of the resultant foam bodies are closed cells. In a preferred embodiment, more than about 90% of the cells of the resultant foam bodies are closed cells. In a more preferred embodiment, more than about 95% of the cells of the resultant foam bodies are closed cells.

Closed cell foams are typically nonabsorbent or have very little absorbency, because it is impossible for liquid to penetrate the closed cells. Accordingly, the foams of Miller are used for nonabsorbent applications such as foam boards and foam insulation (Col. 8, lines 46-49). Miller does not disclose a foam which has a fluid intake flux of about 1 ml/sec/in² or more upon receiving each of three insults, as required by Applicants' claims.

Miller discloses that an elastomeric rubber can be added to facilitate processing of the foamable mixture in an extruder and enhance relaxation of the resulting foam bodies (Col. 7, lines 18-37). However, the resulting foam bodies (e.g., foam boards and foam structures) reflect applications where a rigid or hard foam may be useful, as opposed to one which is soft and flexible. Accordingly, the amount of elastomeric rubber is limited to about 0.1-10 parts by weight of elastomeric rubber for every 100 parts by weight of styrene base polymer (Col. 7, lines 32-38). This means that the elastomeric rubber can be used at up to 10/110, or about 8.9% of the combined weight of styrenic base polymer and elastomeric rubber.

Miller does not disclose a foam having 10% to about 50% by weight of a thermoplastic elastomer as required by Applicants' claims. As explained above, the claimed elastomer content helps the inventive foam to have softness, resiliency and a high percentage of open cells, all of which facilitate use of the foam as an absorbent member in a personal care absorbent article. Miller does not disclose this type of

foam. The foam boards and other foam bodies of Miller are not designed for use in diapers, training pants, swimwear, feminine hygiene articles or other personal care absorbent articles.

Handbook is cited as disclosing surfactants which impart stability to polymers during the foaming process. Federico is cited as disclosing the use of surfactants to facilitate better liquid absorption of foam trays. However, an open-celled foam is required to provide this liquid absorption capacity (See Col. 1, lines 10-13 and Col. 2, lines 24-26 of Federico). If a foam is a closed-cell foam, as described in Miller, the liquid has nowhere to go. Thus, even if the foam of Miller were modified to include a surfactant, an aqueous liquid would merely spread out along the surface of the foam instead of being absorbed. The foam would still not have the fluid intake flux required by Applicants' claims.

Further discussion of Federico is provided below. For the foregoing reasons, the claim rejection based on Miller in view of Handbook and Federico should be withdrawn.

c) Claim Rejection Based On Federico In View of Miller

The rejection of Claims 1-39 as obvious over Federico in view of Miller is respectfully traversed.

Federico discloses an absorbent open-celled polystyrene foam useful in polystyrene trays which carry food products, especially meat or fish, which release aqueous liquids. Food trays, which are used for TV dinners and the like, are typically rigid and cannot be very soft or flexible. If a tray is soft or flexible, the food may spill. Accordingly, the foamed food trays of Federico are made from a mixture of two polystyrene resins, and do not contain a thermoplastic elastomer or other ingredients that would render the trays soft or flexible. Specifically, both Federico and Miller (as explained above) fail to disclose a soft, flexible absorbent foam composition which contains 10-50% by weight of a thermoplastic elastomer.

Furthermore, even though the polystyrene tray is described as "absorbent", Federico does not describe an absorbent foam having a fluid intake flux of about 1 ml/sec/in² or greater, for each of three insults, as required by Applicants' claims. First, a rapid fluid intake is not needed for absorbent food trays. Liquid tends

to pool gradually in food trays, and can be absorbed gradually. Second, Federico focuses on absorbent capacity yet contains no suggestion of rapid fluid absorption. Third, Applicants have compared the fluid intake flux of the inventive foam with that of a commercial absorbent polystyrene meat tray. As shown in Table 8 on page 34 of Applicants' specification, the absorbent polystyrene meat tray had a fluid intake flux of only 0.2 or 0.1 ml/sec/in² following each of three fluid insults. The inventive foam had fluid intake flux of 6.5, 2.4 and 1.9 ml/sec/in², respectively, following each of the three insults.

For at least these reasons, the claim rejection based on Federico in view of Miller should be withdrawn.

d) Claim Rejection Based On Reedy In View Of Handbook And Federico

The rejection of Claims 1-3, 7-12, 14-30, 35, 37 and 39 under 35 U.S.C. §103(a) as obvious over U.S. Patent 5,652,277 ("Reedy") in view of Handbook or Federico is respectfully traversed.

Reedy is directed to a closed-cell foam, and fails to disclose a foam having an open cell content of greater than 55% as required by Applicants' claims. As explained in Reedy:

Generally, the number of such closed cells in the foams according to the present invention is greater than 50% of all the cells present, preferably greater than 60%, more preferably greater than 70%, still more preferably greater than 80%, especially preferably greater than 90%, and most especially preferably greater than 95% (Col. 9, lines 44-50).

Furthermore, a primary purpose of Reedy is to increase the percentage of closed cells in the foam (Col. 3, lines 36-40). This permits the foam to return more organic and atmospheric gases and facilitates post-manufacturing expansion (Col. 1, lines 19-28). Accordingly, it would not have been obvious to modify Reedy in a manner which results in an open-celled foam, or a higher open cell content. See MPEP 2143.01 (It is never obvious to modify a primary reference in a manner which renders the invention of the primary reference inoperable for its intended purpose, or which changes its principle of operation).

Because the primary objective of Reedy is to increase the closed cell content to a very high amount to entrap gases and facilitate expansion, it is clear that the disclosed foam is not absorbent, and does not exhibit the fluid intake flux required by Applicants' claims. The same closed cells that prevent gases from escaping the foam, would prevent liquid from entering. Even if the foams were modified to include a surfactant as disclosed in Handbook, they would not become absorbent because liquid cannot penetrate the closed cells.

Federico discloses an open-celled foam. However, as explained above, it would not have been obvious to modify the foam of Reedy to increase its open cell content. For at least these reasons, the claim rejection based on Reedy in view of Handbook or Federico should be withdrawn.

e) Comments On Information Disclosure Statement

The Examiner objected to Applicants' First Information Disclosure Statement as being long, and as listing more than 200 references. In response, Applicants assure the Examiner that there is no effort or intent to cloak highly relevant references by inclusion in a long list of citations. Instead, the prior art search for this patent application turned up a large number of references, and it is Applicants' standard practice to cite all of the references from the relevant search or searches.

The Examiner must appreciate that reasonable minds often differ as to what constitutes a highly material reference and what does not. If Applicants were to streamline the Information Disclosure Statement based on Applicants' own perception of what constitutes a highly material reference, there would be a significant likelihood of excluding references which might be considered material by a) the Examiner, or b) an opponent in subsequent patent litigation. Thus, by excluding references, Applicants would risk being accused of inequitable conduct and would be placed in a position of having to defend their selection.

To mitigate this risk, Applicants' policy is to err on the safe side, even if many of the references cited are not considered material by the Examiner. Applicants thank the Examiner for her patience and understanding of this process.

f) Conclusion

Applicants believe that the claims, as presented, are in condition for allowance. If the Examiner detects any unresolved issue, then Applicants' attorney respectfully requests a telephone call from the Examiner, and a telephone interview.

Respectfully submitted,



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